

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 05 JUL 2004



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Applicant's or agent's file reference P071963WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/03613	International filing date (day/month/year) 19.08.2003	Priority date (day/month/year) 19.08.2002
International Patent Classification (IPC) or both national classification and IPC B32B1/08		
Applicant UPONOR INNOVATION AB et al.		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
 These annexes consist of a total of sheets.

- This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 04.02.2004	Date of completion of this report 02.07.2004
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Kanetakis, I Telephone No. +49 89 2399-8083 

**INTERNATIONAL PRELIMINARY
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International application No. PCT/GB 03/03613

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-22 as originally filed

Claims, Numbers

1-26 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	2-4,6-8,10-22,25
	No: Claims	1,5,9,23,24,26
Inventive step (IS)	Yes: Claims	11-18
	No: Claims	1-10,19-26
Industrial applicability (IA)	Yes: Claims	1-26
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents cited in the International Search Report (ISR), especially to the passages mentioned therein:

D1: EP-A-0604907

D2: GB-A-2323556

D3: GB-A-2300456

D4: WO-A-9300212

D5: GB-A-2297137

D6: GB-A-2297138

1 Novelty (Art. 33(2) PCT)

1.1 Documents D1, D3 and D4 are considered relevant for the novelty of present claims 1,5,9,23,24 and 26. In particular:

1.2 D1 discloses (column 4, lines 21ff) that during the formation of the pipe an adhesion inhibiting or enhancing agent may be introduced between the outer layer and the core pipe. Preferably, however, a release agent, such as a low molecule weight polyethylene wax, is mixed with the material of the outer layer to facilitate the detachment of the outer layer from the core pipe. If the core pipe is made from polyethene and the outer layer from polypropene mixed with wax, the outer layer is easy to detach from the core pipe. This is particularly advantageous when the core pipe needs to be easily replaceable (relining): the core pipe is replaced by simply pulling it out from the outer layer and inserting a new core pipe in the layer formed by the outer layer.

D1 is considered to detract from novelty of present claims 1,5,9,23,24 and 26.

1.3 Similarly, D3 is considered novelty destroying for the subject matter of claims 1,5 and 6. D3 discloses on p. 6, last paragraph-p. 7, first paragraph, that the outer protective layer may be lightly adhered to the main pipe by means of an adhesive type component in the protective layer. This is exemplified on p. 12, wherein an adhesive type component may be added to the polypropylene skin layer to give a slight tack to the polyethylene pipe surface, thereby increasing the resistance of the two layers to separation.

- 1.4 Similarly, D4 is considered novelty destroying for the subject matter of claim 1. D4 discloses on p. 4, lines 21ff that the adhesion properties between the pipe and the protective coating can be advantageously affected by adding a considerable amount of fillers to the protective coating. These fillers are then considered "an adhesion-modifying agent" according to the wording of present claim 1.
- 2 Inventive step (Art.33(3) PCT)
- 2.1 D2 already recognizes on p. 5, lines 16-24 the fact that the extent of the adhesion between the inner core and the outer protective layer has a substantial influence upon the performance of the pipe. If the adhesion is too great or too small, the mechanical properties of the pipe, and in particular the impact strength, may be adversely affected. Further on, it is stated on p. 10, lines 4ff, that the impact strength of the plastic pipes of D2 is related in part to the adhesion between the inner core and the outer protective layer. If the adhesion is too small the outer protective layer behaves as a relatively thin structurally independent tube and is therefore susceptible to impact damage. If the adhesion is too great, cracks formed by rupture of the outer layer have a tendency to propagate through to the inner core. Ideally, therefore, the adhesion between the outer protective layer and the inner core should be sufficient that, even if the outer core is ruptured and a crack formed, the crack is arrested at the outer layer/inner core interface.
- 2.2 Dependent claims 11-18 relating to the nature of the adhesion-modifying agent are considered to involve an inventive step, since an effect on skin adhesion and pipe impact strength which could not have been foreseen in D1-D6 is shown in the application examples.
- 2.3 Subjective problem to be solved by the current application is to provide a pipe with a peelable skin layer having a good compromise between peelability (adhesion strength) and impact strength. Same problem is solved by any one of D2, D5 and D6, which may then be considered as closest prior art documents. D1 adds a polyethylene wax and does not suggest the specific compounds disclosed in present claims 11-18. Nor D3 (adhesive component added to the polypropylene skin layer but nature of adhesive not disclosed) and D4 (added fillers) suggest the specific compounds disclosed in present claims 11-18.
- 2.4 Remaining dependent claims 2-10, 19-22, 24 and 25 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step.

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- 3 Clarity (Art. 6 PCT)
Claims 22, 25 and the description page 22 have not been deleted.
- 4 Non-SI units have not been additionally expressed in terms of the SI units stipulated by Rule 10.1/(a)/and/(b) PCT.
- 5 Expressions of the type "the disclosures of which are herein incorporated by reference/ by reference in their entirety" appearing in several positions in the description have not been deleted, see the PCT Guidelines PCT/GL/3 Chapter II 4.17-4.17a.